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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,316	09/10/2004	Akira Tsuboyama	03500.017248	4017

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EXAMINER	
YAMNITZKY, MARIE ROSE	
ART UNIT	PAPER NUMBER
1774	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/507,316	TSUBOYAMA ET AL.	
	Examiner	Art Unit	
	Marie R. Yamnitzky	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 Sep 2004, 23 Nov 2004 & 22 Dec 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10 Sep 2004, 23 Nov 2004 and 22 Dec 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 14-16 of claim 1 recite "the heterocyclic rings may have a substituent selected from the group consisting of...". It is not clear if the heterocyclic rings may have a substituent other than those set forth in the group.

It is not clear if general formula (2) as set forth in claim 3 is considered to be a subset of general formula (1) as set forth in claim 1, or if general formula (2) is in addition to general formula (1). If formula (2) is supposed to be a subset of formula (1), it is not clear how the possibility of an isoquinoline ring, or an isoquinoline ring having one or more C-H replaced with nitrogen atom(s), for heterocyclic ring C is within the scope of heterocyclic ring (A), particularly if the substituents for the heterocyclic rings are limited to those set forth in the group in claim 1.

It is not clear if general formulae (3) and (4) as set forth in claims 4 and 5, respectively, are considered to be subsets of general formula (2) as set forth in claim 3, or if general formulae (3) and (4) are in addition to general formula (2). If formulae (3) and (4) are supposed to be subsets of formula (2), it is not clear how the ring structure of three fused rings is within the scope of formula (2) given the definition of the substituent as set forth in claim 3.

Claims 7 and 8: Clarification is required as to whether the recited light emission lifetime pertains to the device as a whole, or to the compound having a partial structure represented by general formula (1).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2-8288.

In particular, see the three formulae at the bottom of the second page and the formula at the top of the third page of the Japanese language document, see the Figure, and see the English language abstract.

The prior art discloses metal complexes of these formulae wherein M may be copper. Subject to claim interpretation, copper complexes of these formulae meet the limitations of a metal coordination compound having a partial structure represented by present general formula (1) or (2). A copper complex of the first or third formula on the second page of the Japanese language document further meets the limitations of a metal coordination compound having a partial structure represented by present general formula (3).

With respect to the light emission lifetime limitation of present claims 7 and 8, it is the examiner's position that it is reasonable to expect that copper complexes of the prior art formulae

inherently meet the limitation given the similarity between the prior art complexes and the copper complexes exemplified in the present disclosure.

4. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Enokida et al. (US 6,001,284).

In particular, see column 1, lines 8-27 and c. 15, l. 1-23. The metal complex compound copper bis(8-hydroxyquinolinate) is named at c. 15, l. 22-23 for use in a light-emitting layer of an organic EL device. Copper bis(8-hydroxyquinolinate) is a metal coordination compound having a partial structure represented by present general formula (1).

5. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Brunner et al. (US 2002/0079830 A1).

See the whole publication. In particular, see paragraphs [0001]-[0002], [0004]-[0011] and [0019]-[0020] and claims 1-5, 9 and 10.

Subject to claim interpretation, electroluminescent materials according to the prior art in which at least one of the at least two metal chelates is a Cu chelate comprising a chelating moiety selected from moieties of the general formulae set forth in paragraphs [0006]-[0007] meet the limitations of a metal coordination compound having a partial structure represented by present general formula (1) or (2). An electroluminescent material according to the prior art in which at least one of the metal chelates is a Cu chelate comprising a chelating moiety of the second formula in paragraph [0006] further meets the limitations of a metal coordination compound

having a partial structure represented by present general formula (3). An electroluminescent material according to the prior art in which at least one of the metal chelates is a Cu chelate comprising a chelating moiety of the first or third formula in paragraph [0006] further meets the limitations of a metal coordination compound having a partial structure represented by present general formula (5).

With respect to the light emission lifetime limitation of present claims 7 and 8, it is the examiner's position that it is reasonable to expect that copper complexes of the prior art formulae inherently meet the limitation given the similarity between the prior art complexes and the copper complexes exemplified in the present disclosure.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner et al. (US 2002/0079830 A1) as applied to claims 1-4 and 6-9 above, and for the further reasons set forth below.

The general formulae for the chelating moieties as shown in paragraphs [0006]-[0007] are unsubstituted, but Brunner et al. teach that the chelating moieties can be substituted or unsubstituted. For example, see paragraphs [0006], [0008] and [0011]. Substituents taught in

paragraph [0011] include substituents within the scope of substituents specified in the present claims. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make and use substituted derivatives of the chelating moieties of the general formulae set forth in paragraphs [0006]-[0007]. Regarding the compound having a partial structure represented by general formula (4) as defined in present claim 5, such compounds are encompassed by the prior art wherein the chelating moiety of the second general formula in paragraph [0006] may be substituted by substituents disclosed in paragraph [0011]. Absent a showing of superior/unexpected results commensurate in scope with the claimed subject matter, it is the examiner's position that it would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable and optimum substituents and patterns of substitution for the prior art chelating moieties.

8. Miscellaneous:

In line 3 of claim 1, "electrode" should read --electrodes--.

9. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
April 28, 2007

Marie R. Yamnitzky
MARIE YAMNITZKY
PRIMARY EXAMINER

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